

**Notice of Allowability**

Application No.

10/750,197

Examiner

Kamran Afshar, 571-272-7796

Applicant(s)

HORANIEH, MOUSSA

Art Unit

2681

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 08/29/2005.
2. ☒ The allowed claim(s) is/are 1-2, 4-5 & 7-8.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

Kamran Afshar, 571-272-7796  
Patent Examiner  
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## DETAILED ACTION

## EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Jeffrey M. Glabicki Reg. No: 42,584 on 11/1/2005.

The application has been amended as follows:

**In The Claims:**

1. (Amended) A method for assigning resources to users in a slotted wireless communication system having candidate timeslots, the method comprising:

an interference level is determined for each candidate timeslot;

an amount of resources available for assignment in each candidate timeslot is determined;

a measurement of fragmentation of codes in a orthogonal variable spreading factor (OVSF) tree in each candidate timeslot is determined;

a Figure of Merit for each time slot is determined using the determined interference level, the amount of available resources and the code fragmentation in the OVSF tree for each candidate timeslot; and

the resources are assigned from the candidate timeslot having a best Figure of Merit,

wherein the determining the Figure of Merit for an  $i^{\text{th}}$  timeslot is per

$$F_i = -\alpha \cdot \Delta I_i + \beta \cdot A(C_i) + FDI_i$$

where  $F_i$  is the Figure of Merit for the  $i^{\text{th}}$  timeslot,  $\alpha$  and  $\beta$  are weighting parameters,  $\Delta I_i$  is a difference between an interference signal code power (ISCP) measurement of the  $i^{\text{th}}$  timeslot and a minimum ISCP measurement of all the candidate timeslots,  $A(C_i)$  is an amount of resource units that can be used by a coded composite transport channel (CCTrCH) of interest in the  $i^{\text{th}}$  timeslot and  $FDI_i$  is a measure of OVSF code tree fragmentation in the  $i^{\text{th}}$  timeslot.

2. (Original) The method of claim 1 wherein the resources are resource units in a time division duplex/code division multiple access communication system.

3. (Cancelled).

## 4. (Amended) A radio network controller comprising:

a radio resource management device for assigning resources to users in a slotted wireless communication system having candidate timeslots, the radio resource management device determines an interference level for each candidate timeslot, determines an amount of resources available for assignment in each candidate timeslot, determines a measurement of fragmentation of codes in a orthogonal variable spreading factor (OVSF) tree in each candidate timeslot, determines a Figure of Merit for each time slot using the determined interference level, the amount of available resources and the code fragmentation in the OVSF tree for each candidate timeslot, and assigning the resources assigned from the candidate timeslot having a best Figure of Merit,

wherein the determining the Figure of Merit for an  $i^{\text{th}}$  timeslot is per

$$F_i = \alpha \cdot \Delta I_i + \beta \cdot A(C_i) + FDi$$

where  $F_i$  is the Figure of Merit for the  $i^{\text{th}}$  timeslot,  $\alpha$  and  $\beta$  are weighting parameters,  $\Delta I_i$  is a difference between an interference signal code power (ISCP) measurement of the  $i^{\text{th}}$  timeslot and a minimum ISCP measurement of all the candidate timeslots,  $A(C_i)$  is an amount of resource units that can be used by a coded composite transport channel (CCTrCH) of interest in the  $i^{\text{th}}$  timeslot and  $FDi$  is a measure of OVSF code tree fragmentation in the  $i^{\text{th}}$  timeslot.

5. (Original) The radio network controller of claim 4 wherein the resources are resource units in a time division duplex/code division multiple access communication system.

6. (Cancelled).

7. (Amended) A radio network controller for assigning resources to users in a slotted wireless communication system having candidate timeslots, the radio network controller comprising:

means for determining an interference level for each candidate timeslot;

means for determining an amount of resources available for assignment in each candidate timeslot;

means for determining a measurement of fragmentation of codes in a orthogonal variable spreading factor (OVSF) tree in each candidate timeslot;

means for determining a Figure of Merit for each time slot using the determined interference level, the amount of available resources and the code fragmentation in the OVSF tree for each candidate timeslot; and

means for assigning the resources from the candidate timeslot having a best Figure of Merit,

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wherein the determining the Figure of Merit for an  $i^{\text{th}}$  timeslot is per

$$F_i = -\alpha \cdot \Delta I_i + \beta \cdot A(C_i) + FDI_i$$

where  $F_i$  is the Figure of Merit for the  $i^{\text{th}}$  timeslot,  $\alpha$  and  $\beta$  are weighting parameters,  $\Delta I_i$  is a difference between an interference signal code power (ISCP) measurement of the  $i^{\text{th}}$  timeslot and a minimum ISCP measurement of all the candidate timeslots,  $A(C_i)$  is an amount of resource units that can be used by a coded composite transport channel (CCTrCH) of interest in the  $i^{\text{th}}$  timeslot and  $FDI_i$  is a measure of OVSF code tree fragmentation in the  $i^{\text{th}}$  timeslot.

8. (Original) The radio network controller of claim 7 wherein the resources are resource units in a time division duplex/code division multiple access communication system.

9. (Canceled).

10. (Canceled).

11. (Canceled).

12. (Canceled).

#### **Allowable Subject Matter**

2. Claims 1-2, 4-5 and 7-8 are allowed.

The following is an examiner's statement of reasons for allowance: 1-2, 4-5 and 7-8.

With respect to claim 1, 4, and 7, the prior art of record fails to disclose singly or in combination or render obvious that a Figure of Merit for each time slot is determined using the determined interference level, the amount of available resources and the code fragmentation in the OVSF tree for each candidate timeslot; and the resources are assigned from the candidate timeslot having a best Figure of Merit, wherein the determining the Figure of Merit for an  $i^{\text{th}}$  timeslot is per  $F_i = -\alpha \cdot \Delta I_i + \beta \cdot A(C_i) + FDI_i$  where  $F_i$  is the Figure of Merit for the  $i^{\text{th}}$  timeslot,  $\alpha$  and  $\beta$  are weighting parameters,  $\Delta I_i$  is a difference between an interference signal code power (ISCP) measurement of the  $i^{\text{th}}$  timeslot and a minimum ISCP measurement of all the candidate timeslots,  $A(C_i)$  is an amount of resource units that can be used by a coded composite transport channel (CCTrCH) of interest in the  $i^{\text{th}}$  timeslot and  $FDI_i$  is a measure of OVSF code tree fragmentation in the  $i^{\text{th}}$  timeslot.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

**Conclusion**


3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- a) Zeira (U.S. 6,791,961 B2), which discloses Selecting an order for physical channel assignment in a hybrid time division multiple access/code division multiple access communication system.
  - b) Magnusson (U.S. 6,163,524), which discloses Code allocation in CDMA.
  - c) Zhang (U.S. 6,885,646 B2), which discloses Dynamic sequencing of timeslots in wireless communication systems.
  - d) Greene, Sr. (U.S. 5,926,763), which discloses Cellular communication system with Voice channel usage biasing.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kamran Afshar whose telephone number is (571) 272-7796. The examiner can be reached on Monday-Friday.

If attempts to reach the examiner by the telephone are unsuccessful, the examiner's supervisor, **Feild, Joseph** can be reached @ (571) 272-4090. The fax number for the organization where this application or proceeding is assigned is **571-273-8300** for all communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Kamran Afshar**

  
**JOSEPH FEILD**  
**SUPERVISORY PATENT EXAMINER**